

FORM PTO-1288
(REV. 10-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

00562/TL

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/622657

INTERNATIONAL APPLICATION NO.
PCT/FR99/00370INTERNATIONAL FILING DATE
18 February 1999PRIORITY DATE CLAIMED
23 February 1998

TITLE OF INVENTION

LOADING BLOCK COMPUTER PROGRAMS

APPLICANT(S) FOR DO/EO/US

Fabien THIRIET

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:

Forms: PCT/IB/304
PCT/IB/308
PCT/IB/332
PCT/IPEA/409 (with English translation
of attachment)

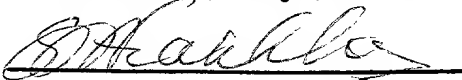
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Date of Deposit:

August 21, 2000

I hereby certify that this paper and any papers identified herein is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231


S. Dianne Franklin

09/622657

INTERNATIONAL APPLICATION NO
PCT/FR99/00370ATTORNEY'S DOCKET NUMBER
00562/TL

- 17.
- ☒
- The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):

526 Rec'd PCT/PTO 21 AUG 2000

CALCULATIONS PTO USE ONLY

Search Report has been prepared by the EPO or JPO \$840.00

International preliminary examination fee paid to USPTO (37 CFR 1.482) \$670.00

No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) \$760.00

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$970.00

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) \$ 96.00

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$ 840.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).

\$

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	3 - 20 =	0	\$ 18.00
Independent claims	1 - 3 =	0	\$ 78.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ 260.00

\$

\$

\$

TOTAL OF ABOVE CALCULATIONS =

\$ 840.00

Reduction of 1/2 for filing by small entry, if applicable. Verified Small Entry Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).

\$

SUBTOTAL =

\$ 840.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).

\$

TOTAL NATIONAL FEE =

\$ 840.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +

\$

TOTAL FEES ENCLOSED =

\$ 840.00

Amount to be:
refunded

\$

charged

\$

a. ☒ A check in the amount of \$ 840.00 to cover the above fees is enclosed.b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-1378. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

FRISHAUF, HOLTZ, GOODMAN, LANGER & CHICK, P.C.
767 Third Avenue - 25th Floor
New York, NY 10017-2023

Tel. No. (212) 319-4900

Fax No. (212) 319-5101

Date: August 21, 2000

SIGNATURE

Thomas Langer

NAME

27,264

REGISTRATION NUMBER

09/622657

526 Rec'd PCT/PTO 21 AUG 2000

Attorney Docket No. 00562/TL

**IN THE UNITED STATES PATENT
AND TRADEMARK OFFICE**

Applicant(s): Fabien THIRIET

Serial No. : To be assigned (U.S.
National Phase of
PCT/FR99/00370, filed
February 18, 1999

Filed : Concurrently herewith

For : LOADING BLOCK COMPUTER
PROGRAMS

Art Unit :

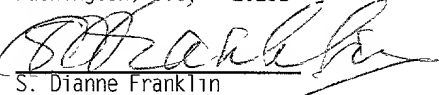
Examiner :

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Date of Deposit: August 21, 2000

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S. Dianne Franklin

In the event that this Paper is late filed,
and the necessary petition for extension of
time is not filed concurrently herewith,
please consider this as a Petition for the
requisite extension of time, and to the
extent not tendered by check attached
hereto, authorization to charge the
extension fee, or any other fee
required in connection with this Paper
to Account No. 06-1378.

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

S I R :

Please amend the above-identified application as follows:

IN THE TITLE:

Please change the title to --LOADING COMPUTER PROGRAMS IN
BLOCKS--.

IN THE ABSTRACT:

Please enter the ABSTRACT OF THE DISCLOSURE attached hereto
as a separate sheet.

IN THE SPECIFICATION:

Page 1, below the title, insert the following heading:
--FIELD OF THE INVENTION--;

between lines 5 and 6, insert the following
heading:

--BACKGROUND OF THE INVENTION--.

Page 2, between lines 7 and 8, insert the following
heading:

--OBJECTS AND SUMMARY OF THE INVENTION--.

Page 3, between lines 2 and 3, insert the following
heading:


--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--.

IN THE CLAIMS (use claims 1-3 as shown on the AMENDED PAGE
attached to the English Translation submitted herewith):

Claim 2, line 1, change "any of the preceding claims" to
--claim 1--.

Claim 3, line 1, delete "or 2".

Respectfully submitted,


Thomas Langer, Esq.
Reg. No. 27,264

Dated: August 21, 2000

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ABSTRACT OF THE DISCLOSURE

A method for loading computer programs into a portable object memory, in particular a chip card, from one or several transmitting devices EM1, ... EMj, ... EMP, p being a whole number. The computer program is divided into n blocks BLK1, ... BLKi, ... BLKn, n being a whole number greater than 1. Information I(n) representing a number of blocks to be loaded is transmitted to the portable object. The blocks BLK1, ... BLKi, ... BLKn are loaded into the portable object memory, and each block BLKi loaded in the portable object is counted, restarting from the last block during re-loading, to avoid restarting from the beginning.

Verification of Translation

I, Robin Holding, having an office at 948 15th Street, #4, Santa Monica, CA 90403-3134, hereby state that I am well acquainted with both the English and French languages and that to the best of my knowledge and ability, the appended document is a true and faithful translation of

International Patent Application No. PCT/FR99/00370, filed on February 18, 1999 in the name of SCHLUMBERGER SYSTEMS.

I further declare that the above statement is true; and further, that this statement is made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

August 8, 2000

Date

Robin Holding
Robin Holding

LOADING BLOCK COMPUTER PROGRAMS

5 The invention concerns the loading of computer programs into a memory of a portable object, and particularly into a memory of a chip card.

Chip cards are portable objects constituted by a card body and a chip.

10 The chip comprises an integrated circuit on the surface of a silicon substrate, said circuit specifically defining storage areas of the chip and a microcontroller part that handles, in particular, the management of the data among the various storage areas.

15 This chip, whether or not it is carried in an electronic module, is integrated into the card body and communicates with the outside world by means of electrical contacts or an antenna. Depending on its mode of communication, the card is said to be contact or non-contact, it being understood that there are so-called combined cards capable of communicating in both communication modes, with or without contact.

20 Conventionally, chip cards are used in applications in which they identify their holder and allow said holder, for example, to obtain a right, such as a right to access services or perform transactions.

25 Access to services sometimes requires a computer program to be loaded into a memory of the card.

However, these computer programs are increasing in size, currently reaching 8 KB and expected to reach 64 KB in the near future.

30 The throughput rate of the microcontroller of the card and the write time of the memories do not allow the instantaneous loading of large programs.

35 For example, the loading time of an 8-KB program into a non-contact card from a transmitting device is on the order of one minute, which is much too long to allow the loading of a program in the average time during which the card is in the effective

electromagnetic field of said transmitting device, particularly given the fact that this device must handle a plurality of cards, as well as potential collisions between said cards.

In practice, the loading is then interrupted, and it is necessary to wait for the time spent in the field of another transmitting device to be long enough for the successful loading of the program in its entirety.

Thus, given the above, one problem that the invention proposes to solve is to allow the loading of a program without the loading time constraints that currently affect the successful loading of said program.

With respect to this problem, the subject of the proposed solution of the invention is a method for loading computer programs into a memory of a portable memory object having a contactless operating mode, particularly a chip card, from one or more transmitting devices EM1, ..., EMj, ..., EMP, p being a whole number greater than or equal to 1, characterized in that it comprises the following steps in which:

- the computer program is divided into n blocks BLK1, ..., BLKi, ..., BLKn, n being a whole number greater than 1;
- a piece of information I(n) indicating the number n of blocks to be loaded is transmitted to the portable object;
- the blocks BLK1, ..., BLKi, ..., BLKn are loaded without contact into a memory of the portable object;
- the loading of the blocks BLK1, ..., BLKi, ..., BLKn is interrupted during the loading of a block;
- the loading of the blocks is resumed; and
- each block BLKi loaded is counted in the portable object.

Advantageously, the method of the invention also comprises the following steps, in which: the loading of the blocks is interrupted during the loading of a block BLKi; the loading of the blocks is resumed with the block BLKi; means FLG in the portable object indicate to a transmitting device EMj the loading state FLG = Y or nonloading state FLG = N, of the portable object; and prior to the resumption of the loading of the block

BLKi, the loading or nonloading state of the portable object is verified.

The invention will be better understood through the reading of the non-limiting description below.

5 The method of the invention applies to portable memory objects, and preferably to chip cards whose format and properties are defined in the standards ISO 78-10 and 78-16, whose contents are incorporated into the present specification by reference, or more preferably, applies to such cards having a contactless
10 operating mode, possibly in addition to a conventional contact operating mode, said cards being characterized in the standard ISO I4443.

15 Non-contact chip cards have an integrated circuit in a silicon substrate, the circuit and substrate assembly constituting the chip, said chip being integrated into an electronic module that is itself integrated into a card body, or integrated directly into said card body.

20 The integrated circuit defines various memories of the chip, including at least one volatile memory RAM and at least one nonvolatile memory ROM, this nonvolatile memory or any of the nonvolatile memories being, as necessary, an electrically erasable programmable memory EEPROM, or a memory of the Flash type PROM. Furthermore, this integrated circuit defines a central processor CPU or microcontroller, said central processor
25 handling, in particular, the management of the data among the various memories, via an address bus and a data bus, said management being timed by clock cycles.

30 The invention is for loading a computer program PRG into one of the memories of the card, and particularly into a nonvolatile EEPROM type memory of said card.

35 Such a program PRG is a set of computer data, defining for example a set of instructions executable by the card. This is the case for application programs written in high-level languages of the Java type, known as applets. In one example, these are programs that allow access to services, as in the case of an ATM

card, or a program that allows the card to perform electronic
purse applications. The size of the programs PRG can vary.
However, the invention is particularly advantageous in the case
of programs of large size, on the order of or greater than 2 KB,
5 for example 8 KB or even 64 KB, whose total practical loading
time is greater than 5 seconds.

In the exemplary embodiment described in the present
description, the program PRG is loaded into the memory EEPROM of
the card, from one or more transmitting readers EM1, ..., EMj,
10 ..., EMP, p being a natural whole number greater than or equal to
1, each transmitting device EMj having a copy of the program or
being capable of obtaining such a copy from an associated server,
under the control of an operator.

For its loading, the program PRG is divided, according to
the invention, into n blocks BLK1, ..., BLKi, ..., BLKn, n being
a natural whole number strictly greater than 1, all of the blocks
BLKi advantageously having a similar size, preferably on the
order of the memory space RAM reserved as a write buffer and
called a buffer memory.

For example, a 2-KB computer program can be divided into
eight blocks BLK1, ..., BLK8 of about 256 bytes each.

The card may or may not be in a loading state, i.e., a state
in which it is waiting for the program PRG to be loaded.

When the card is in the loading state, a storage area FLG of
25 the card, located in the memory EEPROM, is written with a datum,
for example binary, indicating said loading state FLG = Y.
Otherwise, FLG = N.

When the card enters the effective electromagnetic
communication field of a transmitting device EM1, a contactless
30 dialog is established between said card and said transmitting
device EM1, during which dialog the loading state of the card is
verified, or changed if a loading decision is made while the card
is initially in the non-loading state FLG = N.

If FLG = Y and if the loading of the program PRG has not
35 started, a piece of information (In) indicating the number n of

blocks BLK_i that the card should receive is transmitted by the transmitter EM1 to said card.

5 This indication I(n) is received by the card, particularly with the block BLK1, the set of I(n) and BLK 1 first being stored in the buffer memory of the card, then retrieved by the central processor, which stores the indication I(n), or an indication I'(n) derived from this indication I(n), in a storage area COUNT serving as a counter. Likewise, the block BLK1 is stored in the nonvolatile memory EEPROM at a given address, for example ADD1.
10 When this block BLK1 is stored at this address ADD1, the counting memory COUNT is decremented to COUNT = n-1, indicating that there are n-1 blocks remaining to be loaded.

15 If the dialog between the transmitting device EM1 and the card is not interrupted, the block BLK2 is received, stored in buffer memory, then in EEPROM at the address ADD2, specifically following ADD1, and the counter COUNT is then decremented again to COUNT = n-2. The same thing is done for each of the blocks BLK_i up to BLK_n.

20 However, if the dialog between the transmitting device EM1 and the card is interrupted, for example in the case where the card leaves the effective electromagnetic field of the transmitter EM1, the loading of a block BLK_i is interrupted, while the card is still in the loading state FLG = Y.

25 It is then necessary for the card to enter the field of a new transmitter EM_j, which also has a copy of the program PRG divided into blocks BLK1, ..., BLK_i, ...BLK_n, in order for the loading to resume, or for the card to re-enter the field of the transmitter EM1. This new transmitter EM_j can be the transmitter EM1.

30 EM_j then interrogates the card, asking it if it is in a loading state. The card responds that this is in fact the case, based on the indication FLG = Y.

35 EM_j then interrogates the card on the number of blocks loaded. The card responds that i-1 blocks have been loaded, based on the fact that COUNT = i-1.

The loading then resumes, with this new transmitter EMj, with the block BLKi and continues up to the block BLKn, unless a new interruption makes it necessary for the card to enter the field of a new transmitter EMj.

5 When the block BLKn is loaded, the counter is at zero COUNT = 0, and the card is then placed in the non-loading state FLG = N.

10 Thus, no matter what the length of the program PRG to be loaded, a loading in blocks BLKi coupled with a counting of the blocks loaded makes it possible, particularly in the case of non-contact cards, to load an entire program without the interruptions of the dialog between the card and the transmitting devices requiring a new loading of the program from the start.

CLAIMS

1. Method for loading computer programs into a memory of a portable memory object having a contactless operating mode, particularly a chip card, from one or more transmitting devices EM1, ..., EMj, ..., EMP, p being a whole number, characterized in that it includes the following steps in which:

- the computer program is divided into n blocks BLK1, ..., BLKi, ..., BLKn, n being a whole number greater than 1;
 - a piece of information I(n) indicating the number n of blocks to be loaded is transmitted to the portable object;
 - the blocks BLK1, ..., BLKi, ..., BLKn are loaded without contact into a memory of the portable object;
 - the loading of the blocks BLK1, ..., BLK2, ..., BLKn is interrupted during the loading of a block BLKi;
 - the loading of the blocks is resumed with the block BLKi;
- and
- each block BLKi loaded is counted in the portable object.

2. Method according to any of the preceding claims, characterized in that it also comprises a step in which:

- means FLG of the portable object indicate to a transmitting device EMj the loading state FLG = Y or nonloading state FLG = N of the portable object.

3. Method according to claim 1 or 2, characterized in that it also comprises the following steps in which:

- prior to the resumption of the loading of the block BLKi, the loading or nonloading state of the portable object is verified.

APPLICATION FOR UNITED STATES LETTERS PATENT

PCT Declaration and Power of Attorney (35 U.S.C. 371(c)(4))

PCT Application - United States Designated Office

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name; I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **LOADING BLOCK COMPUTER PROGRAMS**

described and claimed in International Application number PCT/FR99/00370 filed February 18, 1999 as amended in the Preliminary Amendment filed concurrently herewith.

I have reviewed and understand the contents of said specification, including claims.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I claim priority benefits under 35 USC §119 of: (i) any foreign application(s) for patent or inventor's certificate listed below; or (ii) any United States provisional application(s) listed below; and have also identified below any foreign application(s) for patent or inventor's certificate, or PCT international application having a filing date before that of the application(s) on which priority is claimed.

COUNTRY	APPLICATION NUMBER	DATE (day, month, year)	PRIORITY CLAIMED
FRANCE	98/02147	23 February 1998	yes <u>X</u> no _____
			yes _____ no _____

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I appoint the following attorneys to prosecute this application and to transact all business in the U.S. Patent & Trademark Office connected therewith: Leonard Holtz, Reg. No. 22,974; Herbert Goodman, Reg. No. 17,081; Thomas Langer, Reg. No. 27,264; Marshall J. Chick, Reg. No. 26,853; Richard S. Barth, Reg. No. 28,180; Douglas Holtz, Reg. No. 33,902; and Robert P. Michal, Reg. No. 35,614.

CORRESPONDENCE AND CALLS TO:

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Type: <u>Fabien THIRIET</u>	Citizen of: France		Post Office Address: 34 RUE DE BOYAU F-45100 ORLEANS, FRANCE
Sign:	Date:		Residence: (City & Country)
Type:	Citizen of:		Post Office Address:
Sign:	Date:		Residence: (City & Country)
Type:	Citizen of:		Post Office Address: